

Application No. 10/712,108
Amendment dated June 19, 2006
Reply to Office Action of March 17, 2006

Docket No.: 0941-0752P

REMARKS

Claims 1, 2, 4-9, 11-18, 20 and 21 are now present in this application.

Claims 1, 11, 15 and 20 have been amended, and claims 10, 19 and 22 have been cancelled. Reconsideration of the application, as amended, is respectfully requested.

Amendments to the Claims

Independent claim 1 has been amended to more clearly identify a novel and non-obvious feature of the claimed invention. Specifically, independent claim 1 has been amended to recite "a ceramic cover, comprising aluminum oxide, at least partially covering the conductive layer, the conductive layer being covered when the pedestal supports a substrate, wherein the ceramic cover is lower than the substrate." Support for these changes can be found on page 9, line 19 of the originally filed specification, and in originally filed Fig. 3. Accordingly, it is respectfully submitted that no new matter has been added.

Independent claim 11 has also been amended to more clearly identify a novel and non-obvious feature of the claimed invention. Specifically, independent claim 11 has been amended to recite "a ceramic cover comprising aluminum oxide" and "the ceramic cover is lower than the substrate when the pedestal supports the substrate". Support for these limitations can be found on page 9, line 19 of the originally filed specification and in originally filed Fig. 3. It is therefore respectfully submitted that no new matter has been added.

Also, claim 15 has been amended to more clearly identify a novel and non-obvious feature of the claimed invention. Specifically, the word "narrower" has been deleted. Support

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for this amendment can be found on page 10, lines 1-3 of the originally filed specification. It is therefore respectfully submitted that no new matter is present in the foregoing amendment.

Finally, independent claim 20 has been amended to more clearly identify a novel and non-obvious feature of the claimed invention. Specifically, the independent claim 20 has been amended to recite "a ring-shaped ceramic cover, comprising aluminum oxide", "the titanium layer is covered when the pedestal supports the substrate", and "the ceramic cover is lower than the substrate when the pedestal supports the substrate". Support for these limitations can be found on page 9, lines 19 and 5-6 of the originally filed specification, and in originally filed Fig. 3. It is therefore respectfully submitted that no new matter is present.

Rejections under 35 USC 112

Claim 13 stands rejected under 35 USC 112, second paragraph. This rejection is respectfully traversed.

The Examiner asserts that there is insufficient antecedent basis for the limitation "the other portion". It is noted, however, that claim 13 depends from claim 11, and that independent claim 11 discloses a conductive layer embedded in the recess, the conductive layer further comprising an upper portion protruding from the recess. As disclosed by claim 11, the conductive layer comprises the upper portion and the portion which is embedded in the recess. Thus, the conductive layer inherently comprises "the other portion," i.e., the portion which does not protrude from the recess. See MPEP 2173.05(e), "*Inherent components of elements recited have antecedent basis in the recitation of the components themselves*". Therefore, it is respectfully submitted that there is sufficient antecedent basis for the limitation "the other

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portion." Reconsideration and withdrawal of this 35 USC 112, second paragraph rejection are respectfully requested.

Claim 15 also stands rejected under 35 USC 112, second paragraph. This rejection is respectfully traversed.

It is respectfully submitted that the limitation, "the narrower upper portion" in original claim 15 has been changed to --the upper portion--. It is therefore respectfully submitted that this claim particularly points out and distinctly claims the subject matter of the instant invention. Reconsideration and withdrawal of this rejection under 35 USC 112, second paragraph are respectfully requested.

Claims 20-22 also stand rejected under 35 USC 112, second paragraph. This rejection is respectfully traversed.

The limitation "the conductive layer" in claim 20 has been change to --the titanium layer--. It is therefore respectfully submitted that these claims particularly point out and distinctly claim the subject matter of the instant invention. Reconsideration and withdrawal of this rejection under 35 USC 112, second paragraph are respectfully requested.

Rejection under 35 USC 102(b) & 103

Claims 1, 2, 4-7 and 11-16 stand rejected under 35 USC 102(a) as being anticipated by Hirano et al., U.S. Patent 5,411,624. This rejection is respectfully traversed.

Claims 8 and 17 stand rejected under 35 USC 103 as being unpatentable over Hirano et al. in view of the Applicant's Admitted Prior Art. This rejection is respectfully traversed.

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Claims 9 and 18 stand rejected under 35 USC 103 as being unpatentable over Hirano et al. in view of Maki, U.S. Publication 2005/0098120. This rejection is respectfully traversed.

Claims 10 and 19 stand rejected under 35 USC 103 as being unpatentable over Hirano et al. in view of Drage, U.S. Patent 4,793,975. This rejection is respectfully traversed.

Claims 20-22 stand rejected under 35 USC 103 as being unpatentable over Hirano et al. in view of the Applicant's Admitted Prior Art, Maki, and Drage. This rejection is respectfully traversed.

It is respectfully submitted that none of the prior art references utilized by the Examiner teach or suggest "a ceramic cover comprising aluminum oxide" wherein "the ceramic cover is lower than the substrate when the pedestal supports the substrate".

Hirano et al. teaches the conductive cathode ring 22 and the auxiliary ring 24 at least partially covering the first susceptor 12. The Examiner acknowledges that Hirano et al. fail to teach the conductive cathode ring 22 and the auxiliary ring 24 comprise aluminum oxide. The Examiner further asserts that Drage teaches providing an aluminum oxide cover (ring 13), and that it would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a cover comprising aluminum in Hirano et al., in order to improve uniformity and etch rate in cooperation with other elements of a plasma reactor as taught by Drage.

Regarding the conductive cathode ring 22, one of ordinary skill in the art at the time the Applicant's invention was made would acknowledge that it is necessary for a cathode to be conductive. Drage teaches that the ring 13 can comprise a variety of materials, and it is believed that the variation in dielectric constant among the various materials usable as ring 13 controls the

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process parameter (see Drage, column 2, lines 39-46). Drage teaches that the ring 13 is a dielectric material, and can comprise MACOR (and alumina-mica material). When the ring 13 is utilized as the conductive cathode ring 22 in Hirano et al., it cannot be a "cathode" and the function thereof fails because the ring 13 is a dielectric material, and not a conductive material. Thus, one of ordinary skill in the art at the time the Applicant's invention was made would not have been motivated to provide a cover comprising aluminum in Hirano et al., as taught by Drage.

Regarding the auxiliary ring 24, Hirano et al. teaches that the auxiliary ring 24 is set higher than the etching surface of the wafer 10 so that the strength of the high-frequency electric field in the space above the auxiliary ring 24 becomes larger than that of the electric field in the space above the wafer 10 (see Hirano et al., column 5, lines 56-61). Hirano et al., however, fails to teach or suggest "the ceramic cover is lower than the substrate when the pedestal supports the substrate" as is set forth in the present application, and one of ordinary skill in the art at the time the Applicant's invention was made would not be motivated to set the auxiliary ring 24 lower than the wafer 10.

The secondary references fail to overcome the above-mentioned deficiencies of Hirano and Drage.

Accordingly, it is respectfully submitted that the prior art utilized by the Examiner, either alone or in combination, would fail to disclose or render obvious the ceramic cover of independent claims 1, 11, and 20, as well as their dependent claims. Accordingly, reconsideration and withdrawal of the 35 USC 102 and 103 rejections are respectfully requested.

Favorable reconsideration and an early Notice of Allowance are earnestly solicited.

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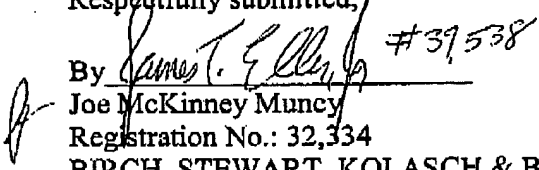
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In the event that any outstanding matters remain in this application, the Examiner is invited to contact the undersigned at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: June 19, 2006

Respectfully submitted,

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